

REPORT SS-H

SYSTEM MONTHLY LOADS SUMMARY

This report gives monthly values of electrical energy for fans, gas/oil energy for heating and cooling, and electrical energy for heating and cooling for an HVAC system. The name of the system (SYST-1) is shown in the title.

1. **FAN ELEC**
shows the total and maximum hourly electrical consumption of the supply, return, exhaust, and zonal fans.
2. **FUEL HEAT**
shows the total oil and gas consumption by packaged systems for heating, in Btu-equivalents. This will be zero unless you have made at least one of the heat sources FURNACE.
3. **FUEL COOL**
shows the total oil and gas consumption by packaged systems for cooling, in Btu-equivalents.
4. **ELEC HEAT**
shows the electrical consumption for heating. This will include electric baseboards and reheat coils as well as the electrical load attributable to the heating cycle of a heat pump.
5. **ELEC COOL**
shows the electrical consumption and hourly maxima for cooling.

SIMPLE STRUCTURE RUN 3, CHICAGO
 DESIGN-DAY SIZING OF VAV SYSTEM
 REPORT- SS-H SYSTEM MONTHLY LOADS SUMMARY FOR

DIVIDE INTO ZONES; ADD PLENUM
 SHOW ALL REPORTS
 SYST-1

DOE-2.1E-001 Thu Nov 4 15:19:02 1993SDL RUN 1

WEATHER FILE- TRY CHICAGO

	- FAN ELEC - -	- FUEL HEAT - -	- FUEL COOL - -	- ELEC HEAT - -	- ELEC COOL - -					
MONTH	FAN ENERGY (KWH)	MAXIMUM FAN LOAD (KW)	GAS OIL ENERGY (MBTU)	MAXIMUM GAS OIL LOAD (KBTU/HR)	GAS OIL ENERGY (MBTU)	MAXIMUM GAS OIL LOAD (KBTU/HR)	ELECTRIC ENERGY (KWH)	MAXIMUM ELECTRIC LOAD (KW)	ELECTRIC ENERGY (KWH)	MAXIMUM ELECTRIC LOAD (KW)
JAN	256.	3.984	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
FEB	215.	3.878	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
MAR	195.	3.320	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
APR	182.	2.198	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
MAY	263.	2.955	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
JUN	469.	4.156	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
JUL	958.	7.304	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
AUG	724.	5.987	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
SEP	346.	4.123	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
OCT	173.	1.794	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
NOV	171.	3.021	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
DEC	231.	3.543	0.000	0.000	0.000	0.000	0.	0.000	0.	0.000
TOTAL	4181.		0.000		0.000		0.		0.	
MAX		7.304		0.000		0.000		0.000		0.000

REPORT SS-L

FAN ELECTRIC ENERGY FOR <system>

This report gives a breakdown of monthly electric energy for fans (central and zone-level) and fan part load operation for an HVAC system.

The energy quantities on the left-hand side of the report are given for heating hours only, cooling hours only, simultaneous heating and cooling hours, and floating hours.

1. FAN ELECTRIC ENERGY DURING HEATING
gives the total electric energy used by the fans in all hours when only heating is required.
2. FAN ELECTRIC ENERGY DURING COOLING
gives the total electric energy used by the fans in all hours when only cooling is required.
3. FAN ELECTRIC ENERGY DURING HEATING-COOLING
gives the total electric energy used by the fans in all hours when both heating and cooling are required.
4. FAN ELECTRIC ENERGY DURING FLOATING
gives the total electric energy used by the fans when neither heating nor cooling is provided.

The right-hand side of the report shows the part-load operation of the fans. The number of operating hours within each percentage part load band (0-10%, 0-20% , etc.) is given as well as the total hours of operation. If the fan operates during an hour, its part load in percent is determined as $100 * (\text{total flow}) / (\text{design SUPPLY-CFM})$.

SIMPLE STRUCTURE RUN 3, CHICAGO
 DESIGN-DAY SIZING OF VAV SYSTEM
 EPORT- SS-L FAN ELECTRIC ENERGY

DIVIDE INTO ZONES: ADD PLENUM
 SHOW ALL REPORTS
 SYST-1

DOE-2.1E-001 Thu Nov 4 15:19:02 1993SDL RUN 1

WEATHER FILE- TRY CHICAGO

MONTH	FAN ELEC DURING HEATING (KWH)	FAN ELEC DURING COOLING (KWH)	FAN ELEC DURING HEAT & COOL (KWH)	FAN ELEC DURING FLOATING (KWH)	Number of hours within each PART LOAD range											TOTAL RUN HOURS
					00 10	10 20	20 30	30 40	40 50	50 60	60 70	70 80	80 90	90 100	100 +	
JAN	256.361	0.000	0.000	0.000	0	0	0	286	10	4	4	1	0	0	0	305
FEB	214.658	0.000	0.000	0.000	0	0	0	239	10	3	3	1	0	0	0	256
MAR	188.892	0.000	0.000	5.833	0	0	0	242	3	1	2	0	0	0	0	248
APR	77.282	59.311	0.000	45.241	0	0	0	216	11	2	0	0	0	0	0	229
MAY	29.165	172.787	0.000	61.428	0	0	0	144	45	27	4	0	0	0	0	220
JUN	0.000	465.212	0.000	3.377	0	0	0	23	49	80	51	4	0	0	0	207
JUL	0.000	957.790	0.000	0.000	0	0	0	1	9	35	72	66	29	28	1	241
AUG	0.000	723.851	0.000	0.000	0	0	0	9	24	62	91	40	12	0	0	238
SEP	9.505	303.856	0.000	32.739	0	0	0	88	45	37	32	3	0	0	0	205
OCT	63.882	77.672	0.729	31.766	0	0	0	224	1	0	0	0	0	0	0	225
NOV	148.524	13.215	0.000	8.918	0	0	0	200	5	2	2	0	0	0	0	209
DEC	230.728	0.000	0.000	0.000	0	0	0	259	11	0	6	0	0	0	0	276
ANNUAL	1218.994	2773.703	0.729	189.301	0	0	0	1931	223	253	267	115	41	28	1	2859

REPORT SS-M

FAN ELECTRIC ENERGY FOR PLANT

This report gives a breakdown of fan electric energy for each month passed to PLANT. The quantities are given for heating hours only, cooling hours only, simultaneous heating and cooling hours, and floating hours. The quantities are calculated by summing the individual space quantities.

1. **FAN ELECTRIC ENERGY DURING HEATING**
gives the total electric energy used by the fans in all hours when only heating is required.
2. **FAN ELECTRIC ENERGY DURING COOLING**
gives the total electric energy used by the fans in all hours when only cooling is required.
3. **FAN ELECTRIC ENERGY DURING HEATING-COOLING**
gives the total electric energy used by the fans in all hours when both heating and cooling are required.
4. **FAN ELECTRIC ENERGY DURING FLOATING**
gives the total electric energy used by the fans when neither heating nor cooling is provided.

SIMPLE STRUCTURE RUN 3, CHICAGO
 DESIGN-DAY SIZING OF VAV SYSTEM
 REPORT- SS-M FAN ELECTRIC ENERGY FOR PLANT

DIVIDE INTO ZONES; ADD PLENUM
 SHOW ALL REPORTS
 DEFAULT-PLANT

DOE-2.1E-001 Thu Nov 4 15:19:02 1993SDL RUN 1
 WEATHER FILE- TRY CHICAGO

MONTH	FAN ELECTRIC ENERGY DURING HEATING (KWH)	FAN ELECTRIC ENERGY DURING COOLING (KWH)	FAN ELECTRIC ENERGY DURING HEATING-COOLING (KWH)	FAN ELECTRIC ENERGY DURING FLOATING (KWH)
JAN	256.361	0.000	0.000	0.000
FEB	214.658	0.000	0.000	0.000
MAR	188.892	0.000	0.000	5.833
APR	77.282	59.311	0.000	45.241
MAY	29.165	172.787	0.000	61.428
JUN	0.000	465.212	0.000	3.377
JUL	0.000	957.790	0.000	0.000
AUG	0.000	723.851	0.000	0.000
SEP	9.505	303.856	0.000	32.739
OCT	63.882	77.672	0.729	31.766
NOV	148.524	13.215	0.000	8.918
DEC	230.728	0.000	0.000	0.000
ANNUAL	1218.994	2773.703	0.729	189.301

REPORT SS-N

RELATIVE HUMIDITY SCATTER PLOT

In this scatter plot, the ordinate, appearing in the left column, shows relative humidity bins. The abscissa, shown at the top, gives hours of the day. Entered in each cell of the plot is the number of hours during the RUN-PERIOD for which the relative humidity of the system return air was in the particular relative humidity bin for this particular hour of the day. Only hours for which the fans are on are counted in this plot.

The column at the far right is the sum of the entries in each row. It shows the frequency of relative humidity values for the RUN-PERIOD. (Because the relative humidity counts are made only for hours when the fans are on, summing the totals column will not sum to the number of hours in the run.)

Note: If fans are on due to NIGHT-CYCLE-CTRL, the hours will not be counted in the plot.

TOTAL HOURS AT RELATIVE HUMIDITY LEVEL AND TIME OF DAY																									
hour	1AM	2	3	4	5	6	7	8	9	10	11	12	1PM	2	3	4	5	6	7	8	9	10	11	12	TOTAL
80-100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
70-80	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	4
60-70	0	0	0	0	0	0	0	6	5	5	5	4	4	2	2	3	3	3	0	0	0	0	0	0	42
50-60	0	0	0	0	0	0	0	45	58	57	53	32	33	29	28	34	35	4	0	0	0	0	0	0	408
40-50	0	0	0	0	0	0	0	42	43	45	41	60	61	69	66	59	61	9	0	0	0	0	0	0	556
30-40	0	0	0	0	0	0	0	26	62	61	57	49	38	48	52	55	51	27	0	0	0	0	0	0	526
0-30	0	0	0	0	0	0	0	7	83	84	96	107	116	103	103	100	101	83	0	0	0	0	0	0	983
*** **																									

REPORT SS-O

TEMPERATURE SCATTER PLOT

In this scatter plot, the ordinate, appearing in the left column, shows temperature bins. The abscissa, shown at the top, gives hours of the day. Entered in each cell of the plot is the number of hours during the RUN-PERIOD for which the zone air temperature was in the particular bin for this particular hour of the day. Only hours for which the fans are on are counted in this plot.

The column at the far right is the sum of the entries in each row. It shows the frequency of temperature values for the RUN-PERIOD. (Because the temperature counts are only made for hours when the fans are on, summing the totals column will not sum to the number of hours in the run.)

Note: If fans are on due to NIGHT-CYCLE-CTRL, the hours will not be counted in the plot.

SIMPLE STRUCTURE RUN 3, CHICAGO

DESIGN-DAY SIZING OF VAV SYSTEM

REPORT- SS-O TEMPERATURE SCATTER PLOT

DIVIDE INTO ZONES; ADD PLENUM

SHOW ALL REPORTS

SYST-1

FOR SPACE1-1

DOE-2.1E-001 Thu Nov 4 15:19:02 1993SDL RUN 1

WEATHER FILE- TRY CHICAGO

TOTAL HOURS AT TEMPERATURE LEVEL AND TIME OF DAY

HOOR	1AM	2	3	4	5	6	7	8	9	10	11	12	1PM	2	3	4	5	6	7	8	9	10	11	12	TOTAL
ABOVE 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80-85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75-80	0	0	0	0	0	0	0	88	90	96	100	106	119	132	141	144	139	15	0	0	0	0	0	0	1170
70-75	0	0	0	0	0	0	0	38	162	156	152	145	132	119	110	107	112	110	0	0	0	0	0	0	1343
65-70	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	7
60-65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELOW 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*** END ***